

VOLUME 16 UNMANNED AIRCRAFT SYSTEMS

CHAPTER 4 AIRMEN CERTIFICATION

Section 1 Pilots

16-4-1-1 GENERAL PERSONNEL QUALIFICATIONS. This chapter addresses the qualifications of all Unmanned Aircraft Systems (UAS) flightcrew members, observers, maintainers, and other personnel, as appropriate. All references to a pilot certificate or Federal Aviation Administration (FAA) written examination refer to an FAA-issued private pilot certificate, a higher certification, or an FAA-recognized equivalent.

16-4-1-3 UAS PILOT QUALIFICATIONS. The FAA is focused on ensuring that UAS pilots have an appropriate level of understanding of the Title 14 of the Code of Federal Regulations (14 CFR) sections applicable to the airspace where UAS operate. UAS pilots are responsible for controlling their aircraft to the same standards as the pilot of a manned aircraft. Civil UAS pilots may be required to have instruction by an FAA-certificated flight instructor (CFI).

NOTE: UAS pilot time may not be used to meet the aeronautical experience requirements towards the issuance of a pilot certificate under 14 CFR part 61.

A. UAS General Operational Requirements. The following operational requirements apply to all UAS pilots:

- 1) One pilot in command (PIC) must be designated at all times.
- 2) The PIC of an aircraft is directly responsible for, and is the final authority of, the operation of that aircraft.
- 3) Each PIC controls only one unmanned aircraft (UA) at a time.
- 4) Pilots are not allowed to perform concurrent duties both as the pilot and the visual observer (VO). In the case of Optionally Piloted Aircraft (OPA), the airborne pilot may assume the role of PIC at all times, but will only be the observer when the control station (CS) pilot operates the OPA.
- 5) Unless undergoing initial qualification training, pilots must be qualified on the aircraft being flown.
- 6) Only one PIC per aircraft is authorized, and the PIC must be in a position to assume control of the aircraft.

B. PIC.

- 1) The designated PIC:
 - a) Has been designated as PIC before or during the flight.

b) Is responsible for the UAS flight operation as described under 14 CFR part 91, § 91.3, or an FAA-recognized equivalent.

c) Is responsible for determining whether the UAS is in condition for safe flight.

d) Must land as soon as safely practical when any condition occurs that causes operations to be unsafe.

e) May be augmented by supplemental pilots; however, the PIC retains complete and overall responsibility of the flight, regardless of who may be piloting the aircraft.

f) Has the ability to assume the duties of an internal or an external UAS pilot at any point during the flight.

g) May rotate duties as necessary to fulfill operational requirements.

h) Must have a thorough knowledge of the Certificate of Waiver or Authorization (COA) issued to the organization when conducting a public aircraft operation, and must retain a copy to reference during flight.

i) Must be trained and qualified on the specific UAS for the conduct of the flight.

j) May assume the duties of VO or PIC if piloting an OPA when the OPA is being utilized as a UAS and being flown by the CS pilot.

2) Rating requirements for the UAS PIC depend on the type of operation conducted; they fall into two categories:

- Operations that require at least a private pilot certificate or FAA-recognized equivalent, and
- Operations that do not require at least a private pilot certificate or FAA-recognized equivalent.

3) The requirement for the PIC to hold a pilot certificate or FAA-recognized equivalent is based on various factors including:

- The location of the planned operations,
- The mission profile,
- The size of the aircraft, and
- Whether or not the operation is conducted within or beyond Visual Line of Sight (VLOS).

4) The PIC must hold, at a minimum, an FAA private pilot certificate or FAA-recognized equivalent for all operations listed below:

- All flight at or above 400 feet above ground level (AGL), including Class A, B, C, D, E, and G airspace.
- Instrument flight rules (IFR) (must have instrument rating) operations.
- Night operations.
- At joint-use or public airfields.
- Requiring a chase aircraft.
- At any time the FAA has determined the need, based on the UAS characteristics, mission profile, or other operational parameters.

5) Operations without a pilot certificate may be allowed when all of the following conditions are met:

a) The PIC has successfully completed, at a minimum, FAA private pilot ground instruction and passed the FAA private pilot written examination or FAA-recognized equivalents. (Airman Test Reports are valid for the 24 calendar-month period preceding the month the individual completed the exam, at which time the individual must repeat the instruction and written examination.)

b) Operations are during daylight hours.

c) The operation is conducted in a noncongested location.

d) Operations are approved and conducted solely within VLOS in Class G airspace.

e) VLOS operations are conducted no further than one-half nautical mile (NM) laterally from the UAS pilot at an altitude at or below 400 feet AGL at all times. See Volume 16, Chapter 1, Section 2, for the definition of VLOS.

f) Operations are conducted no closer than 5 NM from any FAA-designated airport or heliport other than the airport from which the aircraft is operating.

g) The operation is conducted from a privately owned airfield, military installation, or off-airport location.

6) The operators/applicants must provide documentation showing the pilots maintain an appropriate level of recent pilot experience in the UAS being operated or in a flight simulation training device (FSTD). At a minimum, the PIC must conduct three takeoffs (launch) and three landings (recovery) in the specific UAS within the previous 90 days, or as prescribed by the operator/applicant's recurrent training and currency program. This does not apply when the PIC is not required to be involved in the launch and recovery of the UAS operation.

a) For those operations that require a certificated pilot, the PIC, to exercise the privileges of his or her certificate, must have flight reviews and maintain recent pilot experience in manned aircraft per part 61, as appropriate (or FAA-accepted equivalent).

b) For flights approved for night operations, the PIC must conduct three takeoffs (launch) and three landings (recovery) each, in the specific UAS at night, to a full stop in the previous 90 days.

c) For operations approved for night or IFR, the PIC must maintain recent pilot experience per part 61, § 61.57 or an FAA-accepted equivalent, as applicable.

7) The PIC must maintain, at a minimum, a valid FAA second-class medical certificate issued under 14 CFR part 67, or the FAA-recognized equivalent. The second-class medical certificate expires at the end of the last day of the 12th month after the month of the date of the examination shown on the medical certificate listed in § 61.23.

8) Section 91.17 or an FAA-recognized equivalent applies to all UA crewmembers.

9) In addition to the training required for a pilot certificate, UAS PICs must have the following additional training (or FAA-recognized equivalent):

- Normal, abnormal, and emergency procedures in all specific details of the UAS being operated;
- Manufacturer-specific training;
- Demonstrated proficiency; and
- Testing in the UAS being operated.

a) Operators/applicants must maintain individual training records of all UAS personnel.

b) All training and testing will be documented in the individual's training record by the instructor and initialed by the trainee.

C. Supplemental Pilots. Supplemental pilots are those pilots assigned UAS flight duty to augment the PIC. It is common for operators to have both an internal and an external UAS pilot. The supplemental pilot can assume either of these positions.

1) **Ratings.** Supplemental pilots must have, at a minimum, successfully completed private pilot ground school and passed the written test or FAA-recognized equivalents. The ground school written test results are valid for 2 years from the date of completion, at which time the individual must repeat the instruction and written examination. If a supplemental pilot assumes the role of PIC, he or she must comply with the PIC rating, currency, medical, and training requirements listed in subparagraph 16-4-1-3B.

2) **Recent Pilot Experience.** The operator/applicant must provide a process that ensures that pilots maintain an appropriate level of recent pilot experience for the position they are assigned in the UAS being operated.

3) **Medical.** Supplemental pilots must maintain, at a minimum, a valid FAA second-class medical certificate issued under part 67 or the FAA-recognized equivalent. The second-class medical certificate expires at the end of the last day of the 12th month after the

month of the date of the examination shown on the medical certificate, according to § 61.23. Section 91.17, or an FAA-recognized equivalent, applies to all UAS crewmembers.

4) Training.

a) UAS supplemental pilots must have:

- Training in all specific details of the UAS being operated, including normal, abnormal, and emergency procedures;
- Manufacturer-specific training (or an FAA-recognized equivalent); and
- Demonstrated proficiency and successful testing in the UAS being operated.

b) Operators/applicants must maintain individual training records for all UAS personnel. The instructor must document and the trainee must initial all training.

16-4-1-5 through 16-4-1-29 RESERVED.